OBSERVATIONS ON THE GENERA LEILA AND ANODONTITES

BY L. S. FRIERSON

The edentulous shells of South America, classed by Dr. Lea as *Anodonta*, were placed by Simpson (1900) in the two genera *Leila* and *Glabaris*, both of Gray.

The latter genus was subdivided into three sections: *Glabaris* proper, s. s., *Styganodon*, and *Virgula.*

This arrangement was practically retained in Simpson's Catalogue of 1914, but the generic name of *Glabaris* (with the typical section of course) was changed to *Anodontites* Bruguiere.

But because of the radical difference between the *Anodontites crispata* Brug., type of the last named genus, and the *Anodonta exotica* Lam., type of the displaced genus *Glabaris*, the two genera can scarcely be considered synonymous, though thus treated by Simpson, as shown.

As Ortmann has recently hinted (in Memoirs of the Carnegie Museum, Vol. VIII, 1921) the type of the section *Anodontites*, s. s., and that of the section *Styganodon* really belong to the same subgeneric group, and in consequence, when the genus *Anodontites* is adopted, the subgenus *Styganodon* must be dropped.

But as constituted by Simpson, in his two works, but notably in his Catalogue, the *Anodontites* is easily seen to be composed of radically diverse elements, and a need of segregating the units thereof into groups more closely and naturally allied *inter se*, becomes more and more apparent. This can be done expeditiously, and in the writer's opinion, most naturally, by the wholesale removal from the genus *Anodontites*, of the group whose leading member is, perhaps, the *Anodonta trapezialis* Lamarck, and placed them in the genus *Leila.*

This will be the more easily done since it will but in large measure restore the *status quo ante* Simpson; many conchologists having so written many, if not all of the species thus indicated.

The enlarged genus *Leila* will then embrace all of those South American *Naiades*, whose general outward appearance so closely resemble that of the North American *Anodonta grandis* Say.

These shells differ from the emended *Anodontites* in having shells of greater size, yet, in proportion, of thinner texture, and of greater inflation. Their coloring and polish of epidermis are also noticeable differences. Internally, they differ in a more or less sinuous post-pallial line. Most of all, probably, they are to be differentiated by the greater extension of the pallial line, beyond the posterior adductor muscle scar. In some instances this extension reaches the ligamental *sinus.* This extended pallial line may be noted in the figure given by Lea of his *Anodonta forbesiana;* and also in the recent figure given by Ortmann (Memoirs of the Carnegie Museum, Vol. VIII, 1921, Plate XLIV, Fig. 2) of the *Anodontites riograndensis* Ihering.

It is shown perfectly in a fine example of *Leila bahiensis* Kuster before me. Lastly, it is shown in a large specimen of *Leila trapezialis* Lamarck. It is likely that this feature follows from the usual gaping posteriors of the group, thus throwing the work of excluding undesirables from the cavity of the gill chambers, upon the post-mantle edges; this in turn brings about a development of the pallial muscles in that region, and the pallial line noted, evidences their presence.

The genus is naturally divided into two subgeneric groups.

Leila s. s. Type, *Anodonta blainvilliana* Lea.

Pseudoleila. Type, *Anodonta ciconia* Gould.

The latter section being proposed by Crosse & Fischer, 1893.

A study of the species listed in *Anodontites* leads to some conclusions at variance with those of the Catalogue and Synopsis. Some of the more interesting are submitted herewith.

Anodon longinvs Spix., 1827.

This species is listed in the Catalogue as an *Anodontites* (Pg. 1446), but the writer agrees with Clessin, Sowerby, Dr. Lea and Von Ihering, that it is really a *Mycetopoda.*

Both Lea and Sowerby place it as a synonym of *Mycetopoda siliquosa* D'Orbigny, but that species is almost square posteriorly, while the present species is roundly pointed.

It agrees much better with that very poorly named species *Mycetopus subsinuatus* Sowerby, 1868, a species quite often devoid of the subsinuate basal margin for which Sowerby named it.

A shell lies before the writer, collected in Guatemala by A. A. Hinkley, which has exactly the shape of Kuster's figure of *longinus*, a species recently identified as the *M. subsinuata* Sowerby, by Ortmann, and I think correctly.

The writer therefore writes the species as follows:

Mycetopoda longina Spix., 1827.
  Mycetopus subsinuatus Sowerby, 1868.

Anodonta grijalvae Morelet, 1884.

Simpson placed this species in *Glabaris*, 1900 = *Anodontites*, 1914.

A study of the fine figure given by Crosse and Fischer (1893) seeming to show the usual small, semi-oval, ligamental *sinus*, characteristic of the North American *Anodonta grandis* Say, the type specimen in the British Museum was critically examined for the writer by the late Curator, Mr. Smith, who confirmed this impression.

Specimens of *Anodonta grandis* Say, from southern Texas, having very full, high umbones, and very inequilateral in shape, so closely approximate Morelet's shell that the writer places it as one of the myriad phases of that shell.

Anodonta grandis grijalvae Morelet, 1884.
  Anodonta grijalvae Morelet.
  Glabaris grijalvae Simpson, 1900.

Leila sowerbyana, new name.

Anodon trautwiniana Sowerby, Fig. 134.

This species is of course nothing like that of Lea's as Sowerby had it. From its nearest of kin, *Anodon rioplatensis* Sowerby, it differs most remarkably in the extremely short anterior margin, as well as in some other less obvious characters.

Leila grayana, new name.

Anodonta exotica (Gray) Sowerby, Fig. 57.

This species differs from *Anodonta moricandi* Lea (with which Simpson doubtfully identifies it) in being considerably larger, with higher umbones, and the posterior point is on a line with the base, instead of about half-way the altitude, etc.

Simpson gives for the genus *Anodontites* a masculine ending, but Ortmann observes that since the type was originally written *Anodontites crispata* by its author, the genus should be regarded as feminine.

FOSSIL SHELLS FROM THE ST. LUCIE CANAL, FLORIDA

BY CHARLES W. JOHNSON

I recently examined a small but interesting collection of shells secured by Mr. Frederick Nelson, an engineer, while at work on the dredge that is digging the St. Lucie Canal to Lake Okeechobee. This canal is to be a deep water canal with locks. About eight miles from the east coast the canal passes through a strip of pine woods and it was while excavating there at a depth of about 40 feet below the surface that the shells were obtained.

There were six specimens referable to *Busycon maximum* var. *tritonis* Conr. of the Duplin beds of North Carolina. The younger specimens were almost typical of that horizon, but in form the older ones resemble small examples of the recent *B. carica* Gmel. They are broad and thick in proportion to their size, but lack the very large spines and enlarged canal of the body whorl, characteristic of the recent var. *eliceans* Montf. of the Indian River, Florida. In all cases the enamel of the aperture was well preserved. The four *Busycon perversum* L. were also peculiar, one young specimen was a typical var. *contrarius* Conr. of the Duplin, while a second was a form common in the Caloosahatchie Pliocene, called *obrapum* by Grabau (Amer. Nat., Aug., 1903), characterized by a small rounded body whorl, with a long straight canal. The others are huge adult shells, with broad low spires, the body whorl slightly encroaching on the preceeding whorl at the suture, the canal short and somewhat curved; as a whole they resemble the recent shells of the eastern coast of Florida. One was perforated by the boring sponge, and the other had the enamel of the aperture well